

Timothy Unruh:

Hello. I'm Tim Unruh, program manager for the Department of Energy's Federal Energy Management Program (FEMP). Thanks for joining us for first Thursday seminars. If you have participated in previous seminars, welcome back. If this is your first time, you can access our earlier seminars at any time by visiting the FEMP website. Energy expenditures in our country are more than 1.2 trillion dollars. Working to reduce our dependence on foreign fuel while also reducing our energy costs should be a priority for us all. Today, we have the technology, practices and progress to make energy efficiency cost effective. Now is the time for all of us to take action and make our operations as cost efficient as possible.

With new developments at home and abroad, the president has challenged the Federal government to lead by example and meet aggressive goals to reduce the use of carbon based energy and increase renewable energy production. FEMP is producing this training to help you reduce costs associated with energy. To this end, FEMP assists facility managers by offering resources and training for cost effective energy management practices and smart investment decisions. FEMP training can help you identify, plan and implement sound financial and technical solutions for a broad range of energy projects, no matter how large or small.

We hope this seminar and the others in this series will help you reach your energy, water and greenhouse gas reduction targets and reduce your energy costs. Working together, we can reduce the energy costs to facilities, improve the composition and fuel economy fleets, employ the Federal building stock as an example for innovative efficiency methods and utilize new technologies to increase energy security. Moreover, we can accomplish these goals through the use of project funding tools, such as energy savings performance contracts and utility energy service contracts to stimulate the economy, create jobs and reduce costs.

I invite you visit the FEMP website for additional resources, technical assistance and guidance, and to call on our customer service representatives and specialists to share their expertise. Enjoy today's session. Log on to our previous seminars and be sure to register for the ones to follow.

Kathy Hyland:

Hello. Welcome to the Federal Energy Management Program's first Thursday seminars. I'm Kathy Hyland and I'll be your moderator today. This is the seventh course in this series and will focus on energy efficient product procurement. If you have not already printed a copy of the learner guide and handouts, you may do so now. You can do that by accessing the website on your screen, www.femp.energy.gov/firstthursday. You can also print them out after the seminar. The materials and a video archive of this presentation will be available 24/7.

Now let me cover the objectives for our training today. After completing this training, you will be able to one, discuss the legal basis and benefits of the energy efficient product procurement programs. Two, explain how FEMP identifies designated product categories and sets efficiency requirements for Federal procurement. Three, describe the FEMP standby power program. Four, explain how the ENERGY STAR program functions and resources available to support you. And five, list FEMP tools and resources to support you in making energy efficient product purchases.

Our format today is simple. There will be a presentation followed by a question and answer session. And we really encourage your questions. From time to time on your screen you will see an email address, a fax number and a phone number so you can pose your questions. If you would like to speak live with the instructors, you can phone in your question and someone can speak with you directly. So again, we really do encourage you to ask questions.

Our instructor today is Dr. Christopher Payne from Lawrence Berkley National Laboratory. Christopher is a research scientist specializing in energy efficiency and sustainability in the Federal sector. He has supported FEMP's buying energy efficient products program since its inception in the early 1990s. Christopher holds a doctorate in urban affairs and public policy from the University of Delaware and is a leadership and energy and environmental design LEED accredited professional.

We also have with us live from Washington, DC, at the Department of Energy, Amanda Sahl. I'll introduce Amanda to you later in the broadcast.

So without further adieu, let me turn this presentation over to Christopher Payne.

Christopher Payne:

Thank you, Kathy. So today I would like to go over three main topics as a function of our agenda. The first is a brief discussion of the energy efficiency programs that are involved in Federal procurement of energy efficient products. The second is how to actually buy energy efficient products. And the third is other tools and resources that FEMP makes available to you to make those purchase decisions.

Throughout today I am going to be using some terms that may be a little unfamiliar to people who may have some history with this program. We're in the process of changing some of the terminology to offer greater clarity to our Federal buyers. And I will try to be consistent in the use of these terms, but please forgive me if I slip.

The first term I would like to go over is the idea of FEMP designated product categories. These are types of products that are covered by the Federal Energy Management Program for energy efficient procurement. The second is FEMP product energy efficiency requirements or efficiency requirements for short. Those are the levels of performance that a given product within a given category is required to meet to be an efficient product.

The third is the acquisition guidance and efficiency requirements, or the product overview. These are documents that FEMP provides to buyers and others to provide information about each of the product categories, how one can make the purchase and some other examples that we will talk about in a minute.

And finally, I want to talk about lifecycle cost in this presentation. And because lifecycle cost can have different meanings in different context, I want to emphasize that what we are talking about here is the purchase price plus the operating cost of an energy-consuming device.

So with those terminology steps in mind, I would like to move on to our next slide, which is why I procure energy efficient products in the first place. There are six primary reasons that we have this program in place. First, and most obvious, it's required by law to procure energy efficient products in the Federal sector. Second, these energy efficient products that are required for procurement can also contribute to other goals and requirements in the Federal sector. Third, procurement of energy efficient products saves money in the long term, both for the Federal government and agencies, and ultimately for the American taxpayer.

Fourth, reducing energy consumption through purchasing higher energy efficiency products can be good for the environment. Fifth, by purchasing energy efficient products, the Federal government leads by example. And sixth, by effectively buying these products, the Federal government can transform markets.

So let us go over each of those in detail. First, this idea of legal authorities. The idea that we are required to buy these products. There are a number of authorities that require the procurement of energy efficient products. From the Energy Independence and Security Act of 2007 to the Energy Policy Acts of 2005 and 1992, and Executive Orders; you see three of them here, 13221, 13423 and 13514. And finally, these requirements are also written throughout the Federal acquisition regulations.

Second in the number of reasons that we should be buying energy efficient products is that by procuring these products the reduced energy use of these products can contribute to other complementary energy goals and requirements that agencies have. For example, the 3% per year energy reduction goal that agencies face. Second, the greenhouse gas reduction goals that we all face under Executive Order 13514. And third, budgetary requirements; in an area of likely reducing budgets over the years, lower operating costs will be key and procurement of energy efficient products can help achieve that.

So third, as I alluded to earlier, buying energy efficient products saves money. Now, I want to make the point that what we are talking about here is saving money in the lifecycle cost of the product. The purchase price of the product may be one fraction of the total cost. But if we expand the cost of owning the product to include the operating cost, the operating cost can often be larger than the purchase price. And it is that total pie that we are trying to reduce to save money.

Fourth, as I mentioned, procuring energy efficient products can benefit the environment. As we know, the production of energy has with it a number of environmental **exponents**. Everything from the mining that takes place for uranium for nuclear power plants or coal for coal power plants to the emissions that come from burning fossil fuels. All the way to the disposal of things like waste ash spent uranium rods. So by avoiding the energy consumption in the first place, we can help benefit the environment in that way.

Fifth, this idea of leadership by example. By making an explicit statement as a Federal government that energy efficiency is important to us and we are going to buy the products that meet these energy efficiency requirement, we can send a strong message, both to the manufacturing and vendor communities so that they will offer these products and to other countries, other states, other municipalities and citizenry to say, these are important things and we should be taking a look at them.

And finally, this idea of transforming markets. I alluded to it in the previous slide. By leading through example the Federal government can use its purchasing power to encourage both buyers to join with us and buy at these levels of high efficiency, and encourage sellers to sell the products that we are asking for. And by doing so, ultimately what we do is change the products that are available for purchase, and therefore, spread, replicate the efficiency throughout the buying community.

Now for a few statistics about Federal energy use. Energy use in buildings is about 390 trillion BTUs. These are 2009 numbers, I believe, from the Federal Energy Management Program. At a cost of roughly 7 billion dollars in energy costs. Product purchases of energy efficient or energy consuming products rather, are about 5 billion dollars annually. And the potential annual savings, simply from buying efficient products rather than inefficient ones, can be on the order of 15 trillion BTUs, or about 270 million dollars in today's dollars.

So I alluded earlier to the idea of the energy consumption reduction goals that Federal agencies are under. And this slide demonstrates the idea that, you know we have a goal and actually the Federal government's doing a pretty good job of meeting that goal. You will see in 2009 we are below the glide slope and that is a good thing. However, that glide slope continues. And as you can see from about 2005 to 2008, our progress is a little flatter than the slope of that curve going down there. So we are going to need to work to achieve those 2015 reduction goals. And buying energy efficient products is one way that we can achieve that.

So now that I have talked about why you would want to buy an efficient product, let us talk about how to identify an efficient product. There are two main programs in the Federal sector for energy efficiency. The ENERGY STAR program and the FEMP Designated program. In both programs, the goal of the program is to identify roughly the top quartile of the market in terms of energy performance. Those are the energy efficient products. We identify products that display significant energy savings potential over their product lifetime. Obviously it would not make sense to label products that do not save any energy. We want to make sure that what we are recommending is, in fact, lifecycle cost effective. That is an important thing in our programs. And it is important because it allows you, as a buyer, to feel confident that the buy you are making is lifecycle cost effective and meets those requirements in procurement.

We always make sure that the products we recommend use nonproprietary technologies so you do not get locked into a particular brand or particular type of product. And finally, we use industry recognized test standards. So these are publicly available standards for testing the products and determining their product performance.

So I mentioned two programs there. The first, ENERGY STAR, is a joint program of the EPA and DOE. ENERGY STAR covers about 60 product categories. Included within those categories are over 40,000 product models from roughly 1,600 manufacturers. ENERGY STAR works as a voluntary labeling program. Basically, if a manufacturer meets the requirements that the manufacturers and ENERGY STAR have negotiated as the energy efficient level of performance, the manufacturer can use the ENERGY STAR label on their products, and therefore, brand the product as ENERGY STAR and sell it perhaps more efficiently. Products that earn the ENERGY STAR label, it should be emphasized, are those that meet these energy efficiency requirements. And the products are tested and certified by EPA recognized third-party laboratories to make sure that, in fact, you are receiving the performance that you think you are when you get the labeled product.

Some categories that ENERGY STAR covers that are important in the Federal sector include appliances, building products like windows or cool roofing materials, and computers and other forms of office electronics.

Now FEMP, on the other hand, designates products that are – and this program is administered by the Federal Energy Management Program within the Department of Energy. It covers about 15 product categories, primarily commercial building products that are not covered by ENERGY STAR. And our target audience is the Federal sector here. So that is a little bit of a distinction from ENERGY STAR. ENERGY STAR is a program that is aimed at the consumer market nationwide, even worldwide. The FEMP Designated products are unique to Federal sector needs.

So given that, how does FEMP set requirements for what an efficient product will be? Well, first we collect and review data on the performance of a product category. So in this graph that you see here you have a sense of all of the products within a given product category. And going from left to right you see an increase in efficiency from left to right.

So we rank the products on the market from highest to lowest efficiency. We calculate what the top twenty-fifth percentile of what that market is. We then check the level that we have set against other programs. For example, utility rebate programs. To make sure that we are in harmony with those programs so that we continue to send a consistent signal to the market. And we confirm that of the 25 percentile group of products that we have identified, at least three manufacturers or more manufacture products in that group. That way, again, you are not locked into a specific manufacturer.

Now that was an idealized case. This graph shows an example of actual data that we have received. This happens to be for fluorescent ballasts; the devices that drive fluorescent lights to turn on. And in this case you can see that the spread of products was fairly broad with the red bar showing the products that are in the lower 75%. And the green bar showing those that are in the upper 25% of performance. So in this case the line was pretty clear. We drew it at a ballast efficacy factor of 3.03 or better; and moved on.

By comparison, here is another type of lamp and another type of ballast. And what you can see here is that the distribution of products in the market is a little lumpier. And what happens here was we had the choice of either setting the level at 22% of the market or roughly. What do we got there; about 40% of the market. And so to help drive the market towards greater efficiency we varied a little bit from our top twenty-fifth percentile goal to push toward energy efficient products. But we were guided by our guiding principles in doing that. And it is important to emphasize in this case that all of the products that did qualify were available from multiple manufacturers, were lifecycle cost effective.

So given that analysis, FEMP and ENERGY STAR have both identified energy efficient products. Now what does FEMP do to help you identify those products and buy them? Well, the product categories that are important to Federal customers include ENERGY STAR products, FEMP designated products and a subset of FEMP designated that I will allude to later in the presentation, products with low standby power.

Our primary mechanism for helping Federal buyers identify and procure these products are acquisition guidance and requirements pages. Each of these pages is written for a particular product category. And it provides information about the efficiency requirement that we are setting to identify the product as meeting a level of energy performance that we deem efficient. It includes the mandates and legislation that I mentioned earlier so that you can be confident that you have legal backing for requiring this level of performance. The documents offer purchase, maintenance and operations tips, because sometimes where to buy them or how to install them can be a key issue. And so we provide brief information on those.

And finally, we offer a cost effectiveness example, along with the assumptions that we use to make those cost effectiveness examples, so that you can get a sense of how much buying an efficient product will save relative to an inefficient product. For many of our products we offer cost calculators that allow you to go in and modify our cost effectiveness assumptions to fit your own agency's needs. For example, your local utility prices or operating hours.

So let us talk a little bit more about these acquisition guidance and efficiency documents. This is a display of one of them. They all have this same general look. And so you can look for the big blue bar. And those are the acquisition guidance documents. A standard component of each of these documents is the performance requirement or the efficiency requirement that we mentioned earlier. What does it take as a level of performance to meet the Federal requirement? And another standard component is the cost effectiveness example, as I mentioned. So that you can see, here is how much I can expect to save by buying the efficient product.

Another way one might interpret that second table is in this case the required level of performance will, as we have assumed, save \$21,000.00 over the life of the product. Another way to think about that is, you can afford to spend up to \$21,000.00 more for an efficient product compared to an inefficient one and still break even.

Now as we know, the market is always changing. Utility prices change. Other standards go into effect. A variety of things happen. And so this acquisition guidance is continually updated by FEMP. We have a biannual review process that reviews the existing requirements we have in place. And we will update them with revisions or additions as needed. As I said, this reflects changes in the market, including changes to the DOE minimum efficiency standards, changes to ENERGY STAR specifications, changes to the marketplace itself, a shift in the way that products are manufactured, for example. And that includes both technology advances and new products. New products can come on to the market. And if we find that those are significant in the Federal sector we will initiate coverage of them.

Now I alluded earlier to this issue of standby power. And I want to talk a little bit about this. It is a slightly complex subject. But I am hoping that by talking through it we can understand a little better.

So standby power is a function of or let me restate that, standby power is the amount of power that is consumed by a product when it is at its lowest energy consuming mode. That typically occurs when a product is switched off or not performing its primary purpose. Now you might say the product is switched off. Why isn't it not using any power at all? Well, a number of products will have none zero "off" power for a variety of reasons. They might be listening for a remote control signal, like a TV set. Or they might be displaying a clock, like your old VCR or your microwave. Or many products have large brick transformers that plug into the outlet. And those bricks can remain active, and in fact, yet hot and release energy through the heat.

So the idea here is that the Energy Independence and Security Act of 2007 requires agencies to purchase products with a standby power level of 1 watt or less. The reason we do this is because standby consumption in products is variable. Just like the graphics I showed you earlier about sort of active mode consumption, different products have different levels of standby within a given product category. So if we can identify those that have the low standby and buy only those, we can achieve the same kinds of market transformation effects that allow us to reduce this energy consumption.

So here are some examples of products that we currently cover. As you will see, they are primarily office equipment, electronic products. FEMP has the authority under that act to identify levels that are appropriate. So in some cases you can see here that it is difficult to meet a 1 watt threshold and so FEMP has set a higher level. In this case, 2 watts or less for certain types of computers.

When we have set these levels, we ask manufacturers to provide data to us about the standby power levels of their products. In fact, that is a little reverse. What happens is manufacturers provide us the standby power data and then we make the determination about where the level should be. The point here is that the products that qualify are all available in the standby power datacenter, which is available at the URL you see on your screen. So you can look up a particular product category, for example copiers. Or you can look up a particular model of product, say a Dell Latitude D65K; there happens to be one sitting in front of me. And you can find whether or not that product meets the low standby requirements in that datacenter.

So to make the point, standby power is a unique subset of energy consumption that one needs to be concerned with to lower overall energy use.

Now there is a trick here, which is that unfortunately many of the products examples that I showed earlier are ENERGY STAR products, you may have noticed. Yet ENERGY STAR does not include in all of their products requirements for standby power. And so unfortunately, because of these overlapping requirements, Federal buyers are required to make sure that a product is both ENERGY STAR qualified and meets the required standby power level. Now there is one bit of sunshine in that, which is that in the standby power datacenter all of the products we list there that are in categories covered by ENERGY STAR are ENERGY STAR qualified products. So for those products, if you look up the standby, you know that it also meets the ENERGY STAR requirement.

So as I have described this, you can see as I alluded, it is a little complex. What is FEMP doing about this program? Where are we taking it? Well, in the short-term what we would like to do is unify the standby power datacenter and the requirements associated with it with the Federal supply source databases, GAS advantage and DOED e-mall. And so what will happen is you can look up a product on GSA advantage or DOED e-mall and find the standby power of that product there easily.

Over the longer term what we're trying to do is incorporate these low standby requirements into things like the FEMP designated and ENERGY STAR programs so that we cannot have to do this duplication of checking and just be sure that when you buy, for example, an ENERGY STAR qualified product, you are done. Unfortunately, we have not reached that yet. But that is where we hope to go.

Now I have mentioned a number of categories of products, but I have not been specific about which product categories exactly we cover. Here are some examples, and you can see how they are identified as either ENERGY STAR qualified, FEMP designated or are covered under the FEMP standby power requirement. Again, these are examples. The full list of those products or product categories is available at the URL on your screen. So you can click on that and get the full list of products that are covered by both ENERGY STAR, FEMP and the low standby requirements.

Kathy Hyland:

Okay. Let us switch now and talk – and hear from Amanda Sahl with the DOE FEMP program. Amanda Sahl serves as the program lead for FEMP's energy efficient product procurement program. In this role, she is leading the effort to help agencies meet their mandates to procure ENERGY STAR labeled and FEMP designated energy efficient products. Amanda received her master's of environmental science from Yale University and also served as the program lead for the FEMP Federal fleet management program. Now to Amanda.

Amanda Sahl:

The Federal government purchases a wide array of products from every region of the country and every sector of the economy. Spending up to 10 billion dollars annually on energy using products.

Making wise decisions to purchase the most efficient products can save taxpayer dollars, accelerate the transition to a secure energy economy and protect the environment.

Hello, I am Amanda Sahl, product manager for energy efficient product procurement at the Department of Energy's Federal Energy Management Program. The Federal government has a long history of policy leadership in the procurement of energy efficient products. As Chris told us, great progress has been made already through executive orders, regulations and changes in the FAR. While these advances are important, they are not sufficient to fundamentally change procurement behaviors. We need to incorporate these policies into our day-to-day practices so energy efficient procurement becomes the default purchasing decision rather than a difficult one.

To expedite decision making, FEMP offers a broad range of services to implement and institutionalize sound purchasing principles in your agencies' departments, divisions and offices. FEMP publications, online tools and assistance can help you make the right purchasing decisions quickly and effectively. From the FEMP website, you can access comprehensive overviews, as well as fact sheets and other publications. FEMP's product efficiency requirements, buyer tips and cost calculators can help you choose the best products in more than 50 different categories. For each category, web overviews include a summary of FEMP or ENERGY STAR requirements, buyer tips and related resources. Visit the FEMP website to see a complete listing of FEMP designated product categories.

FEMP also provides model contract language for specific product types, including IT and building products, to help you further streamline your procurement efforts. Every product comes with two price stacks. One is the original purchase price. And the other is the cost to operate that product over time. With FEMP's online energy calculators, you can estimate lifecycle energy, water and cost savings, based on utility rates and the operating conditions in your area. At the standby power datacenter, you can find products that meet Federal standby power requirements. You can also connect with additional resources for cost effective purchasing, such as the motor master plus and the building lifecycle cost program, GSA advantage and DOED e-mall. You will learn more about these resources later in this seminar.

FEMP offers direct assistance, guidance and outreach through the interagency energy efficient product procurement working group. FEMP also works directly with agencies to incorporate performance levels for energy efficient products into guide or purchasing specifications. FEMP's web-based presentations and training are designed to keep you up to date on the latest energy efficient product procurement requirements and tools. We invite you to learn more about these and other groups and to take advantage of these resources by visiting our website.

Energy efficiency in the Federal sector has come a long way. But there is much more that needs to be done in order to meet our goals. So FEMP remains focused on developing tools to help you easily and effectively institutionalize energy efficient purchasing at your agency. Check the FEMP website for new customer service features, interactive tools and opportunities to influence future programming.

Thank you for joining us today. I encourage you to call in to our live Q&A session at the end of the program to have your questions answered.

Kathy Hyland:

Thanks, Amanda. Amanda will be available to answer questions at the end of this seminar, but now back to Christopher.

Christopher Payne:

Thanks, Kathy. So Amanda and I have spent some time talking about how the program is structured and what the requirements are for procurement. But now let us talk a little bit about how to buy energy efficient products. The key here, to me, is that everyone shares responsibility within the Federal sector for the procurement of energy efficient products. Obviously contracting and procurement officials have a great role to play to make sure that these energy efficiency requirements get included in all statements of work, in contracts, in evaluations of offer, and in requests for proposal. And as a means of follow up to make sure that the contracts are evaluated over their lifecycle.

But those procurement officials themselves are not alone in the responsibility of procuring energy efficient products. Purchasing officials are often relying on specifiers to tell them what they are supposed to be buying. And that can be people like program managers or construction managers, task managers or service coordinators. And so it is important for those professionals to also know to be asking for the energy efficient products when they are contacting their procurement or contract officers.

And finally, all Federal or Federal contractor employees can, both request products that are energy efficient of their buyers, and if they have the government procurement card, be aware that these requirements apply to them as well. So if you are going out and buying, for example, an inexpensive inkjet printer, make sure you are buying an ENERGY STAR version.

The mention of contractors also reminds me that it should be clear that these requirements pass through to contracts and subcontracts. So contract officers and procurement officials should make sure that the people they are contracting to provide services, if they are buying products as a part of the services, are required to purchase the energy efficient products.

So where can you buy some of these energy efficient products? Well, obviously the Federal supply sources are a good first step. GSA advantage and DOD e-mall are both places that are dedicated to identifying energy efficient products. Of course, many of the products are also available from commercial sources. But one should be careful to note that when buying from a commercial source it is still important to meet these ENERGY STAR qualified or FEMP designated efficiency requirements.

So we have talked a lot about the idea of purchase price versus lifecycle cost. And there is a question about, well, what happens if these energy efficient product costs more? I mean can I buy it even though I can buy something cheaper? And the answer is yes. In fact, you are required to. And that is part of why the requirement exists. It is to try to take away some of that first cost bias in procurement and say, it is okay to buy the efficient product, and in fact, the efficient product is the cheapest thing over the total lifetime of the product.

This example shows the purchase price and energy cost of two boilers that we plucked somewhat at random from GSA advantage. And these are boilers made by the same manufacturer. They are roughly the same size. One happened to be slightly smaller than the other. And as you can see, the purchase price difference between the low efficiency and the high efficiency unit is roughly \$30,000.00. That's a pretty big difference when the first cost of the low efficiency unit is \$12,500.00.

But look at the energy cost of this product. It dwarfs the purchase price. We are talking about over half a million dollars in energy cost. And these are at today's rates at fairly low discount rates. You can imagine as your utility costs increase that number will go up. And so it is really key here to buy the high efficiency product, which, as you can see, through its life will save almost double the first cost premium that would have been paid to buy it in the first place.

So emphasis here, a) the purchasing requirement is meant to help you get away from the lowest first cost bias. And b) there's really money where the mouth is here. These products do save money in the long run.

Another aspect to that idea is that, as I have said, you know feds are required to buy these products. And the strategic sustainability performance plans, or sustainability plans that agencies are required to file now under Executive Order 13514, include reviews of procurement. So your agency should be budgeting to buy the sustainable products, which include the energy efficient products. And OMB will be looking for that. And so ideally, you should be receiving the money you need to be able to make that first cost purchase.

But we know that appropriated dollars are not always available to make all of the investments that we would like to make. And so there are a number of different ways that we can fund these

projects. Energy savings performance contracts, or ESPCs, utility energy service contracts, or UESCs, are programs that allow a third party, an energy services company or a utility, to come in and bear the first cost of investment in a new energy efficiency upgrade and then get paid back through the savings over the life of the product.

Many of the products that I mentioned are smaller products, like ENERGY STAR office equipment. In this case, often you can look for your local utility rebates on these products. And in addition to the utility rebates, there can often be other energy product incentive funds. For example, some states offer funds for improvement of energy efficiency with the state and these products will qualify for rebates or other forms of benefit.

So I mentioned the idea of a major renovation. Here are some energy conservation measures that you might consider in a major renovation that are covered by either FEMP or ENERGY STAR. They include things like fluorescent lighting, and actually other forms of lighting as well, such as the building envelope. So things like, as I said earlier, cool roofs or windows, skylights, doors. Those are all ENERGY STAR qualified products. For instance, boilers and chillers, these are particularly important because they have such long lifetimes. So getting it right at the first buy is very important, because you are committing to the life of the product's energy use. And we want to minimize that to the degree we can.

Package rooftop units are quite common in one to two story buildings all throughout the Federal government. Power generation. We have in the past, and will soon again be offering a purchasing specification for distribution transformers. And those can play a big role in campus settings. For example, on military bases. And finally, water heating. We offer product categories in the various types of water heating.

So in addition to those acquisition guidance documents that I mentioned earlier, FEMP has other tools that are available to assist you in purchasing energy efficient products. The first is the idea that FEMP always uses an efficiency metric when setting that energy efficiency requirement that is publicly available. And so on the packaging from the manufacturer or vendor, you should be able to receive information about the product's performance and be able to identify whether or not it meets the required level. The energy guide label that DOE implements along with the Federal Trade Commission, is an example of this. So the energy guide label can show you, in this case on this refrigerator, that it used 630 kilowatt hours per year. Which qualified it for the ENERGY STAR label, as you can see in the bottom right.

So an important point here is that efficiency metrics are available. And manufacturers and vendors can help you identify which products qualify.

In addition, FEMP offers model contract language. We have specific language for information technology and construction contracts, which are fairly common and often also fairly complex. There are FAR language, and in fact, specific FAR clauses in Part 52 of the FAR that include as standard contract language the requirement for energy efficiency. So one can just check that box, have it automatically included in the contract. And similarly, the FAR requires inclusion of these language in source selection and evaluation factors. And we have models for those as well. All of those available at the URL you see here.

Another tool that we mentioned earlier are these energy cost calculators. You may be concerned that you only use the product at a certain number of months in a year or that your utility price is extremely high and you are concerned about how much energy you might be losing by buying the inefficient product. Well, these calculators can help you put in your own information and calculate for yourself what your local conditions will likely result in terms of energy cost savings.

FEMP offers training, obviously we are doing that today. But we have integrated this training into other things like training for procurement officials. The Federal Acquisition Institute and the Defense Acquisition University both include requirements on energy efficient procurement in their training of procurement officials. Other agencies have procurement courses that include efficiency

– the requirement for purchasing energy efficient products as part of their agency procurement courses. For example, the Department of Energy does that.

We also offer training at major government conferences, like ____ Energy or GSA Expo. And when resources permit, we do offer unique training to agencies that request it from FEMP.

Finally, as Amanda alluded to earlier, we have the interagency energy efficient product procurement working group. That is a mouthful. I will just call it the working group for now. This working group is part of a larger task force that is meant to help agencies share best practices, learn from one another and reduce their energy consumption. Our working group is open to any agency that is a member of the interagency energy management task force. The group is chaired by FEMP. And the minutes are available on FEMP's website.

But the key component of this working group is that it is a two-way dialogue. Not only is this an opportunity for FEMP to tell you, the procurement community, about what is happening with FEMP and ENERGY STAR and where we are headed in terms of new products to cover or new efficiency levels to set or new training modules to offer. But it is also an opportunity for you, as a procurement official or as a Federal buyer, to talk to us at FEMP and say, "Look, this is what I need to be able to do my job better. What can you do for me to help me do that?" And an excellent example of that are the changes that were made in the FAR. That was a direct result of some early feedback we got a number of years ago from working group members who said, it is great that this is in executive orders. It is great that this is in legislation. But we need it in the Federal Acquisition Regulations, because that is where our buyers are looking for their information. And so we put it there. Thank you to that working group member for recommending that.

So in summary, I want to emphasize that FEMP is trying to achieve four things in its strategy. First, we are trying to make the procurement of energy efficient products policy. I think you will see that we have done that through the laws, the executive orders, the Federal Acquisition Regulations, the agency directives, etc. So the policy is in place.

But second, we want to make sure that those policies translate into practices. So we want to do things like incorporate it in training courses, offer sessions like we are having today to make people aware of these policies and try to make it known that these are requirements that the Federal government should be pursuing.

Third, we want to make it easy. And that is what these acquisition guidance documents are about. They are one or two page documents that are trying to give you the highlights of, look, this is what to buy and this is where to buy it. And here is how much you can expect to save. As we go forward, we are trying to make it easier still through, for example, our collaboration with GSA and DOD on the GSA advantage and DOD e-mall sites. Or through things like I said about trying to incorporate standby power into other requirements so that there is not that overlay.

Finally though, the point here ultimately is to make the procurement of energy efficient products effective. The program is only as effective as you, the buyer, in buying the products make it. So the key is to get the Federal sector to be procuring these energy efficient products.

And so in the future, FEMP will, in addition to the things that we have described today, continue to work to improve the integration with Federal supply sources so that you can look to them as a primary source of information about what products are available that are ENERGY STAR qualified or meet the FEMP designated efficiency requirements.

We are trying to work with agencies to institutionalize good procurement practices through things like the training that we are offering and work that we hope to continue with agencies to do things like make it easier in the software tools that buyers use to make a buy to identify the efficient products. And finally, we want to focus on this idea of establishing evidence-based assistance to procurement officials. So what we mean by that is we want to know that what we are trying to provide to you really works. If it does, then we will keep doing it. If it does not work, there is no

point in us continuing to do it and we will move on until we find the thing that is most effective for both of us.

So in conclusion, procurement is an essential part of energy policy. It is riddled through a number of energy legislation, executive orders and Federal Acquisition Requirements. And it is an important and non-capital intensive mechanism of reaching our 3% per year energy efficiency goals in Federal buildings. I want to emphasize that idea of non-capital intensive. Look, we are going to be buying these products anyway. Buying the efficient product is a small price to pay for that significant lifecycle cost advantage that we get.

Third, energy efficient product purchasing is a proven success in market transformation. We have examples of places where the Federal market, by saying, we want this level of efficiency, has resulted in manufacturers shifting their product lines to make sure that they meet those requirements. But, as I alluded to earlier, institutionalizing of good procurement practices is the necessary component for success. And so the key point here is, if we all work together the program can be successful in market transformation.

Here are the contact information for both Amanda, the FEMP program manager, and me. I'm at Lawrence Berkley National Laboratory. Please feel free to contact us directly if you have any questions.

Kathy Hyland: Alright. Thanks, Christopher. In this part of the seminar we will be happy to answer your questions. So please give us a call to speak directly with Christopher or Amanda. I have a question ready. Amanda, I am going to direct this one to you first. What leverage does a Federal agency have over its contractors to purchase energy efficient products?

Amanda Sahl: Well, all of our leverage is through our contracting mechanisms. So if we are trying to get energy efficient products purchased that is what we should be specifying and requesting in our contract solicitations, looking for in our evaluations of contracts and then including in contract modifications when it is necessary to modify and update a contract to include that. So that is a real source of leverage is through the contracts that we sign and the contracts that we ask for and evaluate.

Kathy Hyland: Thanks, Amanda. Christopher, do you have anything to add to that?

Christopher Payne: I think Amanda is right in the procurement – in any given individual procurement. But I think there is also leverage in our procurements overall. And so that, again, is something I want to emphasize. That if the Federal government can unify on this idea of purchasing energy efficient products, that is the leverage that allows us to achieve that market transformation. But as Amanda said, in any given procurement, the key element really is in the contract language that a company's to buy.

Kathy Hyland: Thank you. I have a question from the Department of the Army. Do the energy requirements for energy efficient procurement apply to contractors? We have a contractor who supplies printers and computers, etc. Are they required to follow these guidelines? Christopher, do you want to start with that one?

Christopher Payne: Sure. The short answer is yes, they are required to follow those guidelines. The Energy Policy Act of 2005 makes it clear that these are pass-through provisions. So they are to be included in requirements for contractors in their procurement of products as well.

Kathy Hyland: Amanda, do you want to add anything to that?

Amanda Sahl: I would just add that while it is a pass-through provision, you can certainly help clarify the issue for your contractors by making sure that you also include the required clauses in the contracts themselves. Just to remind them of that requirement.

- Kathy Hyland:* Okay. Thank you. I have a question from Florida. And his question relates to a flooring product. How much does product price matter? What is the cost difference allowable for purchasing? Is there a guidance on what is allowed for natural bio-rapidly renewable product base versus a synthetic oil-based material that is not renewable? Christopher, do you want to star with that one?
- Christopher Payne:* I am going to give you a weasely answer I am afraid. Which is that FEMP covers energy consuming products. And so in this case, flooring products are not an energy consuming product and would not be covered by FEMP. I understand your point though. They are covered by sustainability provisions. The issues of lifecycle cost effectiveness in the sustainability requirements are perhaps not as clear as they are in the energy consuming products area. And so really, I would have to give that one to other agencies that deal more closely with the sustainability requirements.
- Kathy Hyland:* Okay. Amanda, I want to direct the next one towards you. How can we better educate Federal employees about the lifecycle cost savings of ENERGY STAR or FEMP designated products?
- Amanda Sahl:* I think the first step to education is definitely raising awareness. So step one is for us to get the word out. I would encourage you to encourage your colleagues to take this training or similar training where that point is made. I would also encourage you to try to share that information and awareness with your colleagues explaining what lifecycle cost is.
- The other thing is, FEMP recognizes how important it is to educate procurement officials as well as technical specifiers throughout the government about lifecycle costs. And so we are making investments over the next fiscal year so that we can bring more resources to the Federal government to help bring about change in this area. The end point is that it is very important and important for good stewardship of our taxpayer dollars that we do take into account lifecycle costs. As Chris mentioned, in the end this is the most cost effective option for the Federal government and for our taxpayers. So it is important that we keep that in mind.
- Kathy Hyland:* Christopher, anything to add to that?
- Christopher Payne:* I think one thing I would like to amplify from what Amanda said was this idea of just spreading through your own local contacts. Leadership by example is not something that is only true in the aggregate. It is true at an individual level too, and so if you, as a procurement official, can explain to your colleagues at, for example, procurement conferences or even people in your department, why you are doing what you are doing that can help spread the word too.
- Kathy Hyland:* Thank you. Chris, the next one is directed – I am going to direct towards you first. It says, can you name any specific big-ticket items that should be emphasized in the overall Federal effort towards a more energy efficient purchasing?
- Christopher Payne:* Hmm. Well, of course I want to emphasize that the procurement requirements exist for all ENERGY STAR qualified or FEMP designated efficiency requirements. But I think that there are some obvious examples of very large energy consumers. And the key element, I think, is the lifetime, the anticipated lifetime of the product. And so I am thinking of things like chillers or large commercial boilers, commercial water heaters. Things that have lifetimes of 15, 20, 25, even 30 years. In those situations, when the buyer or the procurement official, signs the contract and makes the buy, they have committed to the energy consumption of that product over that 15 to 30 year life of the product. And so there, it is critically important to make sure that we are making a good choice upfront, because we are stuck with it for the life of that product. So I think this is an area I would emphasize.
- Now again, I want to also emphasize that, for example, computers, turn over roughly every four years in the Federal sector. I believe that is the GSA requirement. And so in that circumstance, you know they are going to turn out more rapidly. But we buy so many of them that they are also a big energy consumer. So first, look for the long haul items but do not neglect the little ones, because in volume they can be a big consumer too.

Kathy Hyland: We have a caller on the line from the Naval Academy. Can you introduce yourself?

Caller: I am one of the community planners in the energy section. I have a question about where do we find the specification for the lighting and the building envelope and the boiler, the chiller and the AC in the website? And also, how do we perform a lifecycle analysis in the website? Is that possible?

Christopher Payne: As for the website itself, the URL was provided earlier. I could scroll up if you want to. But it's FEMP.energy.gov/procurement. On the left-hand side of that screen you should see a set of navigation elements. And I believe it is the second or third one down is purchasing requirements or purchasing specifications. If you click that you will get a list of a number of products in categories that include commercial and industrial equipment, residential appliances, etc. That is the list of the acquisition guidance documents. As I mentioned at the top of the hour as it were, we are going through a little bit of a change in terminology right now. So right now the website will say things like purchasing specification. Soon it will say acquisition guidance instead. But that is where you can find those documents.

As to your second question about lifecycle cost analysis, let me give you two answers. The first is if you want to be doing very careful lifecycle assessment of building energy retrofits, the building lifecycle cost tool that FEMP offers that is linked through our website is an excellent example of a simulation program that can give you pretty detailed information about the cost effectiveness of a given retrofit option. So for true building lifecycle costs, BLCC is a great software tool.

These cost calculators that I mentioned earlier are, I would say, a lesser form of lifecycle cost analysis. They are rather simplistic tools. They do not take the place of a full lifecycle cost analysis. But, in part, they should not have to in many cases. What we have identified in our policies and in the code of Federal regulations is that FEMP designated and ENERGY STAR qualified products can be assumed by the agency to be lifecycle cost effective in normal operation. So it is only if you have unusual circumstances that you would want to go to those cost calculators and see what the impact might be.

Kathy Hyland: We have a caller on the line from Phillips Lighting.

Caller: Hi. This question is probably for Christopher. When you were talking about the upfront cost of products versus the lifecycle operating costs, you said that the Federal government is required to buy the more efficient product over the long run because the cost will eventually catch up. My question is that if there is a clearly more efficient product out there but when it is run through the lifecycle operating cost it comes out to say equal or even lesser value compared against the upfront costs, what is the FEMP tool going to tell that person? Are they going to say that is okay, we will shoulder the additional cost over the lifecycle because you are going with a more energy efficient product? Or is it going to say, no, go with the cheaper option and sacrifice the energy efficiency?

Christopher Payne: Mm hmm. Let me see if I can restate your question to make sure that we are on the same line of thought. And that is if the purchase price of a very efficient product is high enough that it essentially negates the high level of efficiency, what do you do then? Is that correct?

Caller: Exactly.

Christopher Payne: Right. Yeah. And I think what we have said is, but I would defer to Amanda to pipe in here since she is the FEMP policy person, historically our program has encouraged the purchase of the more efficient product because of some of these other eligibility criteria that we use. So lifecycle cost is, of course, an important component. Sometimes it is okay though to spend a little bit more to help tug the market toward those more efficient units. And we have seen examples of that where in doing so we fairly dramatically brought the cost of that down.

Kathy Hyland: Amanda, would you like to add to that?

- Amanda Sahl:* Yes, I would like to add to that. Just add to that that is one of the reasons that you can cite if you would like to request an exemption. So you can request an exemption. As Chris alluded to, we do encourage you to consider if you need to, or if this is a case where you could do a more in-depth analysis of cost. So in some cases our simple calculations may show that it could cost a little bit more over the long run. But then when you take into account other factors that we have not included in our cost calculators, such as maintenance, it may mean that it is still a lifecycle cost effective product for you. Even in cases where it is not that is where it becomes a policy decision for yourself or for your agency to decide how much of a cost it is and whether or not you want to shoulder that. In making that decision I would encourage you to think about whether or not this contributes to other agency goals, such as reducing building energy intensity. And you may find that even though an energy efficient product could come at a slight additional cost, it may be your cheapest way to reduce energy and to reach greenhouse gas reduction goals. So that is another way that you can think about this is even if there is an additional cost it may be the cheapest option for meeting some other goals.
- Kathy Hyland:* Thanks, Amanda. We have EPA on the line.
- Caller:* Hi, yes. My question is here at the EPA we purchase a lot of lab equipments. And was wondering if there is any development for standards of energy efficient for lab equipment.
- Christopher Payne:* I'll take that.
- Amanda Sahl:* We do not currently have any – oh, go ahead.
- Christopher Payne:* Sorry. Satellite delay there. We do not, as Amanda was beginning to say, currently have any specifications for laboratory equipment. However, I do know that ENERGY STAR is looking into a couple of types of lab equipment, particularly in consultation and collaboration with FEMP's Labs for the 21st Century program. Because we have identified the use, the load of laboratory equipment as an important component of energy consumption in laboratory facilities. And so I know that they have been looking at some things like medical refrigerators. And I believe there was some talk about centrifuges. But that is early in development still. One of the problems that is associated with covering those products is establishing these industry standard test procedures so that we can make sure that when we are setting a level we are comparing apples to apples across the products.
- But it is certainly an excellent question. One thing that you might want to look into, many times medical refrigeration equipment, for example, has very little difference from general commercial refrigeration equipment. And it is possible to do a sort of technology procurement where you would ask a commercial refrigeration company to meet these standards. Often they can. They will warranty it. And in those ways you can achieve efficiencies.
- But the short answer is there is no current identification of efficient lab equipment. And while there are some discussions to make some, they are not anticipated any time soon.
- Kathy Hyland:* Amanda, anything to add to that?
- Amanda Sahl:* Sure, Kathy. I would add two things. The first is that FEMP is definitely open to considering additional product categories that we should cover. The way in which we make that decision though, Chris covered our guiding principles. And so we use those guiding principles to determine whether or not we will cover a new product category. That means that we need to have some sort of data to encourage us to look further. So in the case of laboratory equipment, we would want to know volumes of purchases or potential energy savings. Something to allow us to calculate potential energy savings so that we could determine if it is a useful category.
- Chris also mentioned a difficulty in laboratory equipment that there are often not any testing standards. That may make it difficult for us to set specifications or, sorry, efficiency requirements in some of those product categories. But it does, if we can see the potential, we have a sister program within FEMP that works on new and underutilized technologies. So we would still be

interested in working with you to identify areas of significant energy savings potential so that one or both of our programs could cover it.

Kathy Hyland: Thanks, Amanda. I have a question from WAPA. Are items in GSA Advantage flagged to let buyers know if there are ENERGY STAR or FEMP designated products. Christopher, you want to take that one?

Christopher Payne: Oh, I think I'll let Amanda take that one first.

Kathy Hyland: Okay, Amanda.

Amanda Sahl: Okay. We are working with GSA, and they do have a system in place to identify and tag products that meet standards. It is a lot easier for ENERGY STAR products and for products with low standby power requirements, because in those cases there are actual products that have a label or are listed in a database. It is a little more difficult for GSA to identify products that meet our efficiency requirements for FEMP designated product categories because we do not actually designate or identify specific products. We just set the level and then leave it up to the buyers or the suppliers to identify which products are above, at or above those requirements. We are, however, working with GSA to try to put a system in place to make it easier for you all to purchase compliant products through their system, as well as with DOD e-mall.

Kathy Hyland: Thanks, Amanda. I have a question from Equipment Integration. The caller works with municipalities and finds that these government agencies are pretty much insulated from your progressive attitudes. Why can't the Federal government reach out to municipalities and help them embrace your perspectives? You want to start with Amanda on that one?

Amanda Sahl: Sure. I certainly would hope that municipalities would adopt a similar progressive attitude. I know within FEMP we are very focused on helping the Federal government, and with the mind-set for making the Federal government leaders by example. So while we do not actively reach out to municipalities, I do hope that our website and other resources at least can help others in those efforts.

Kathy Hyland: Okay. I have a question from a military agency. I am not sure which one. It says, are you aware of any problems with DOD using an ESP or UESC to provide supplemental funding to add energy efficient equipment in new Federal constructions on Mil Con projects? Amanda, you want to try that one?

Amanda Sahl: I am not aware of any problems, but I would be happy to speak with the gentleman offline. That sounds like a more detailed question. So I would encourage him to contact me and I will be happy to work with you.

Kathy Hyland: Okay. I will provide you with his email address. Okay. Next question. Christopher, why don't more Federal buildings have occupancy sensors to control lighting used in restrooms, storage spaces and similar spaces? Is it an issue of first cost or are there other reasons?

Christopher Payne: Hmm. Well, that is an interesting question. Let me give you a couple of answers. First, we do not currently have an ENERGY STAR or FEMP specification for the category lighting controls. There has been discussion of that in both FEMP and ENERGY STAR. And a lot of what that comes down to is the fact that energy controls on lighting systems, and building energy control systems more broadly, are fairly design intensive systems. It is important that they be designed correctly. It is important that they be specified correctly. It is important that they be installed, commissioned and ultimately maintained correctly to operate properly.

So while it might seem like kind of a no-brainer in some cases to put in an occupancy sensor, what we have found is that it is hard to do the calculation necessary to deem it a requirement under a purchasing policy tool like the FEMP designated program. I think it does make sense to look at occupancy sensors in a variety of settings. But I would encourage you to involve lighting

designers when you do, because there can be a number of issues that come into play. Everything from, as I said, appropriate calibration, to even things like fire safety requirements.

Kathy Hyland:

Okay. Amanda, I am going to direct the next question towards you. That should there be some type of requirement that all personal workstations plug into a power strip to switch everything off when not in use?

Amanda Sahl:

I would not say that there should be a Federal requirement for power strips. However, there are situations where they make sense. And there are a number of situations where they make sense. Generally, power strips are used for either one of two purposes. The first would be to help remind you to shut off all of your devices. So it is useful of that. They can also be useful in providing a hard off switch for products that actually have higher low standby power. For that second point, I would say that your first priority should really be to procure products that have low or no standby power to begin with. However, if you have products that you are not going to be replacing soon that do have higher standby power, power strips can be a good option. They also do help you remember to shut things off.

Kathy Hyland:

Thank you. Christopher, let me send this one your way. Do you anticipate any significant changes to the regulations, product categories or energy efficiency thresholds in the near future?

Christopher Payne:

Hmm. Well, I would take that at a macro and a micro level. At the macro level, in terms of you know Federal legislation or other executive orders, way above my pay grade and so therefore I cannot speak to those kinds of things. However I do know that there have been certain members of Congress from both parties that express interest in improving product efficiency in the Federal sector. But whether that will be involved in any sort of statutory change is anyone's guess.

At the more micro level though, I think the issues that I mentioned earlier about our biannual review cycle for FEMP designated products come into play here. Certainly we can anticipate things like the new lighting standards that are coming into play in a couple of years are going to fairly substantially change the market for fluorescent lighting. And in that case that will have a pretty dramatic impact on the distribution of performance of lighting in the market. And when that happens, of course, FEMP will be involved in analyzing what that distribution is. And checking to see if it is, in fact, broad enough to justify a FEMP designated efficiency level.

I can give you an example of a product that we went through just recently where that changed. In the Energy Policy Act of 2005, I believe it was, there was a – no, I am sorry, it was the Energy Independence and Security Act of 2007. Basically they required a minimum efficiency standard for electric motors that was set at the level that FEMP had set for energy efficient products. And so what had been a FEMP designated efficiency requirement for electric motors became the legal minimum standard. You cannot buy or manufacture anything that performs less than that in the United States.

Now as a result, what happened was what had previously been a distribution of motor performance went (*Noise*) and got very narrow very quickly when that standard took effect. We can anticipate that over the next few years product advances will occur that start to stretch that performance band out again. And at that point FEMP could look at new requirements.

But to answer the original requirement, I do not see anything very substantial changing in the near future other than our regular review cycle.

Kathy Hyland:

Amanda, anything to add to that?

Amanda Sahl:

Well, I would add that we are going to be taking a more detailed look than we have in the past at the potential energy savings within the Federal marketplace. And that study that we're undertaking will probably have an impact on which product categories we operate in. So that will help us prioritize and ensure that we are setting efficiency requirements in the categories that have the greatest impact. So I would anticipate that that will make – that will change some of the requirements that we set over the next year to two years.

Kathy Hyland: Thank you. I have a question from someone who would just like a little bit more information on the energy efficiency calculators. Where to access them and if there are any integrated calculations like ROI and payback, GHG, etc.

Christopher Payne: Yes.

Kathy Hyland: Go ahead, Chris.

Christopher Payne: Okay. Thanks. First, I want to note that the calculators are actually maintained by two sources. FEMP has some web-based tools that we provide FEMP designated products. And then ENERGY STAR has some Excel based tools that they provide for their products. In neither case, to my recollection, do we do, you know the types of shall we say business case analysis that you mentioned of things like ROI or simple payback period. The analysis is really pretty straightforward. One could imagine building on the calculators fairly readily to do that. But we have not done that.

In the case of ENERGY STAR's spreadsheets, I believe they include information about CO2 emissions that can be avoided as a result of implementing the ENERGY STAR products. So in that case, there are some GHG emissions information available. In FEMP's calculator cases there are not.

Kathy Hyland: I have a question from NARA. Is FEMP working with GSA and other product catalogs to offer only ENERGY STAR or FEMP designated and EPAC complaint products?

Christopher Payne: Amanda.

Kathy Hyland: Chris – Amanda, Amanda, you take that one.

Amanda Sahl: Okay. Well, certainly that would seem like a really good way to increase compliance dramatically and also make purchasing decisions a lot simpler for agency procurement officials. At the moment that is not the case. We have raised it as something that may be of interest to both Federal suppliers as well as private sector suppliers. But generally, I think the demand is going to have to first come from the customers of those suppliers before GSA, DOD and private sector begins to really implement that. So I would encourage you to contact the supplier that you use most frequently and encourage your colleagues to do the same asking for that. We stand ready to help any supplier that wants to make that possible. It certainly is a good business model.

Kathy Hyland: Amanda, I am going to go – oh, Chris wants to add something to that.

Christopher Payne: I actually wanted to back up one question. I know that the questioner had asked about where to find those calculators and those could be found at femp.energy.gov/calculators.

Kathy Hyland: Great. Thank you. Last question. Amanda, I am going to direct this one to you. The question is from PNNL. Do you foresee the day when your program expands from goods into services? One example would help Federal travelers choose a more energy efficient method of travel, more energy efficient routing, more energy efficient airlines.

Amanda Sahl: Well, FEMP is supporting some efforts in those areas already through greenhouse gas work. GSA has a number of tools available. I do see that that could be an area of future expansion. But really, only time will tell whether or not we end up moving in that direction. And I am not sure that our efficiency requirements program within FEMP specifically would be the area where that would be based or if it would be a broader FEMP effort.

Kathy Hyland: Thank you, Amanda. That is all the time we have today. So I would like to thank Christopher and Amanda. Now let us take a look at the collection of first Thursday seminars that are archived on the FEMP website for viewing 24/7.

[Music]

Thanks once again to DOE's Federal Energy Management Program for making these seminars possible. And thank you for joining us. This is the last seminar in our series this year. We look forward to providing additional seminars next year that will meet your training needs. Until then, take care. And remember, you have the power to save energy, save money and save resources for a secure and sustainable future. Please take a moment to complete a brief evaluation to help us determine what future training topics you would like FEMP to offer and ways we can improve these first Thursday seminars.

You could also complete a quiz to reinforce your learning and print a certificate for your records. You can access this quick evaluation and quiz in one of three ways. You can go to the website, www.femp.energy.gov/firstthursday and find the quiz and evaluation there. If you have registered for this course you will get an email to follow up, and it has a link to the evaluation and quiz. And if you are watching this today by live webcast, you can click on the paper clip icon and it will take you directly to the evaluation and quiz.

Thanks, and see you next year.

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